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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,303	03/16/2001	Bartlett Scott Hudson Michel	D-427	9104

7590

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EXAMINER

DENNISON, JERRY B

ART UNIT

PAPER NUMBER

2143

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

09/810,303

### Applicant(s)

MICHEL, BARTLETT SCOTT  
HUDSON

### Examiner

J. Bret Dennison

### Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Action is in response to Application Number 09/810303 received on 16 Mar 2001.
2. Claims 1-15 are presented for examination.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 9 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 1 recites the limitations:

“destination IPA storing at a proximal IPA in a forwarding table a destination IPA”,

“destination URL identifier storing at the proximal IPA in the forwarding table a destination URL identifier for identifying the web content data, the destination URL identifier is stored in the forwarding table in reference to the destination IPA”,

“destination URL identifier transmitting the destination URL identifier to the destination at the destination IPA”

These limitations are unclear to Examiner. Examiner will interpret the limitations as follows:

“storing at a proximal IPA in a forwarding table a destination IPA”,

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“storing at the proximal IPA in the forwarding table a destination URL identifier for identifying the web content data, the destination URL identifier is stored in the forwarding table in reference to the destination IPA”,

“transmitting the destination URL identifier to the destination at the destination IPA”

Appropriate correction is required.

4. Claim 9 recites the limitations:

“distal IPA storing at a proximal IPA in a forwarding table a distal IPA”,

“distal URL identifier storing at the proximal IPA in the forwarding table a distal URL identifier for identifying the web content data, the distal URL identifier is stored in the forwarding table in reference to the distal IPA”,

“distal URL identifier transmitting the distal IDKL identifier to the distal destination at the destination IPA”

These limitations are unclear to Examiner. Examiner will interpret the limitations as follows:

“storing at a proximal IPA in a forwarding table a distal IPA”,

“storing at the proximal IPA in the forwarding table a distal URL identifier for identifying the web content data, the distal URL identifier is stored in the forwarding table in reference to the distal IPA”,

“transmitting the distal IDKL identifier to the distal destination at the destination IPA”

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Appropriate correction is required.

5. Claim 12 recites the limitations:

“destination IPA storing at a proximal IPA in a forwarding table a destination IPA”,

“distal URL identifier storing at the proximal IPA in the forwarding table a distal URL identifier for identifying the web content data stored in the distal cache, the distal URL identifier is stored in the forwarding table in reference to the distal IPA”,

“distal URL identifier transmitting the distal IDKL identifier to the destination at the destination IPA”

These limitations are unclear to Examiner. Examiner will interpret the limitations as follows:

“storing at a proximal IPA in a forwarding table a destination IPA”,

“storing at the proximal IPA in the forwarding table a distal URL identifier for identifying the web content data stored in the distal cache, the distal URL identifier is stored in the forwarding table in reference to the distal IPA”,

“transmitting the distal IDKL identifier to the destination at the destination IPA”

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Nazem et al. (U.S. Patent Number 5,983,227).

6. Before a detailed mapping, a short discussion about “caching” (as known in the art at the time the invention was made) should be made to clarify use of commonly used terms. A “cache” was known as a special memory subsystem in which frequently used data values are duplicated for quick access. A memory cache stores the contents of frequently accessed RAM locations and the addresses where these data items are stored. For example, web browsers maintain a local copy of web pages and other related items in cache to speedup reloading of previously visited pages from the Internet. Therefore, from what is known in the art, it is inherent that a computer contains a cache.

7. Regarding claims 1, 9, and 12, Nazem discloses a method for retrieving from a destination web content data specified by a source at a source internet protocol address (IPA) and corresponding to a uniform resource locator (URL) associated with a web server, the method comprising the steps of,

storing at a proximal IPA in a forwarding table a destination IPA (Nazem, col. 3, lines 1-5, Nazem teaches IP addresses stored in an name server),

storing at the proximal IPA in the forwarding table a destination URL identifier for identifying the web content data, the destination URL identifier is stored in the forwarding table in reference to the destination IPA (Nazem, col. 3, lines 1-5, Nazem teaches determining an actual IP address from a URL in the name server),

receiving from the source a source URL identifier, matching the source URL identifier to the destination URL identifier (Nazem, col. 2, line 66 through col. 3, line 5, Nazem teaches the browser submitting a URL identifier to the name server, and the name server matching the identifier with the actual IP address),

cross referencing at the proximal IPA in the forwarding table the stored destination URL identifier with the destination IPA (Nazem, col. 3, lines 1-5, Nazem teaches finding the actual IP address from the URL, which inherently means that the URL identifier is cross referenced with the IP address),

transmitting the destination URL identifier to the destination at the destination IPA (Nazem, col. 3, lines 1-20, Nazem teaches transmitting the URL to the proper page server), and

transmitting from the destination at the destination IPA the web content data to retrieve the web content data from the destination (Nazem, col. 3, lines 15-35, Nazem teaches the page servers transmitting the web content).

8. Regarding claim 2, Nazem discloses the limitations, substantially as claimed, as described in claim 1, including wherein,

the destination is a distal web cache (Nazem, col. 3, lines 10-15),

the source is a user browser at a source IPA (Nazem, col. 2, lines 65-67),



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the source URL identifier is an exact URL (Nazem, col. 2, lines 59-67),  
the proximal IPA is an IPA of a proximal web cache (Nazem, col. 3, lines 1-5,  
Nazem teaches a name server, which it is inherent that a name server is a cache),  
the distal web cache transmits the web content data to the  
source at the source IPA (Nazem, col. 3, lines 10-15),  
the method further comprising the steps of  
receiving the source IPA at the proximal web cache (Nazem, col. 3, lines 1-5),  
and  
transmitting the source IPA to the distal web cache, the  
distal cache transmitting the web content data to the user browser (Nazem, col. 3, lines  
1-20).

9. Regarding claim 3, Nazem discloses the limitations, substantially as claimed, as  
described in claim 1, including wherein,

the destination is a distal web cache (Nazem, col. 3, lines 10-15),  
the destination IPA is a distal web cache IPA (Nazem, col. 3, lines 10-15)  
the source is a user browser at a source IPA (Nazem, col. 2, lines 65-67),  
the source URL identifier is an exact URL (Nazem, col. 2, lines 59-67),  
the destination URL identifier is an encoded URL (Nazem, col. 3, lines 5-10),  
the proximal IPA is an IPA of a proximal web cache (Nazem, col. 3, lines 1-5,  
Nazem teaches a name server, which it is inherent that a name server is a cache),

the distal web cache transmits the web content data to the proximal web cache (Nazem, col. 3, lines 10-15, Nazem teaches the distal cache sending the web content data to the client's computer, which inherently contains a cache),

the method further comprising the steps of  
receiving the source IPA at the proximal web cache (Nazem, col. 3, lines 1-15),  
transmitting the proximal IPA to the distal web cache (Nazem, col. 3, lines 1-15),  
receiving from the distal web cache the web content data at the proximal web cache (Nazem, col. 3, lines 10-15), and

transmitting the web content data from the proximal web cache to the user browser at the source IPA (Nazem, col. 3, lines 10-15).

10. Regarding claim 4, Nazem discloses the limitations, substantially as claimed, as described in claim 1, including wherein the destination URL identifier in the forwarding table is a series of compression codes corresponding to respective linked segments of the URL, each of the linked segments corresponding to one or more components of the URL to decompose the URL into the linked segments, the linked segments are linked by parental pointers from a first linked segment having no parental pointer through remaining linked segments having respective parental pointers to a preceding one of the linked segments to a last linked segment reference to the destination IPA (Nazem, col. 2, line 66 through col. 3, line 5, Nazem teaches the browser submitting a URL identifier to the name server, and the name server matching the identifier with the actual IP address).

11. Regarding claim 5, Nazem discloses the limitations, substantially as claimed, as described in claim 4, including wherein

the destination URL identifier references the URL comprising scheme, name, path and type components and delimiters (Nazem, col. 2, lines 59-67),

the linked segments correspond to successive concatenated components of the URL and are respectively referenced to one or more of the successive concatenated components of the URL (Nazem, col. 2, lines 59-67),

each of the compression codes are referenced to the linked segments and to the one or more successive concatenated components through pointers for respectively cross referencing the compression codes to the linked segments (Nazem, col. 2, line 59 through col. 3, line 15, Nazem teaches cross referencing URL's with IP addresses), and the destination IPA is referenced to the destination URL identifier when the all or the respective compression codes through the respective pointers point to a complete set of linked segments from the first linked segment to the last linked segment (Nazem, col. 2, line 59 through col. 3, line 15, Nazem teaches cross referencing URL's with IP addresses).

12. Regarding claim 7, Nazem discloses the limitations, substantially as claimed, as described in claim 1, including wherein the destination stores a set of web content data one of which is the web content data, the set of web content data corresponding to a wildcard URL for indicating a set of URLs one of which is the URL (Nazem, col. 3, lines 15-20),

the destination URL identifier is a wildcard URL identifier (Nazem, col. 3, lines 1-25),

the source URL identifier is an exact URL having a plurality of URL components a first of portion of which serving as a prefix to a remaining portion of the exact URL (Nazem, col. 2, last paragraph), and

the matching step is a prefix matching step for matching the first portion of the URL components of the exact URL to the wildcard URL identifier in the forwarding table (Nazem, col. 2, last paragraph).

13. Regarding claim 8, Nazem discloses the limitations, substantially as claimed, as described in claim 7, but does not explicitly state wherein the prefix matching step is a longest prefix matching step serving to match the longest first portion of the URL components of the exact URL to the wildcard URL among a plurality of wildcard URLs matching a shorter first portion of the URL components of the exact URL. However it would have been obvious to one in the ordinary skill in the art at the time of the invention to incorporate matching the longest portion of the URL in order to obtain the correct IP address from the forwarding table, which is the function of the forwarding table.

14. Regarding claim 10, Nazem discloses the limitations, substantially as claimed, as described in claim 9, including wherein the web content data is transmitted from the distal cache to the user browser during the transmitting step ((Nazem, col. 3, lines 15-

35, Nazem teaches the page servers transmitting the web content to the user's browser).

15. Regarding claim 11, Nazem discloses the limitations, substantially as claimed, as described in claim 9, including wherein

the proximal IPA is a location of a proximal cache (Nazem, col. 3, lines 1-15);

the web content data is transmitted from the distal cache to the proximal cache during the transmitting steps (Nazem, Fig. 2, 214, col. 3, lines 1-23); and  
the web content data is further transmitted from the proximal cache to the user browser during the transmitting step (Nazem, col. 3, lines 1-15).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 13-15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nazem in view of Rune (U.S. Patent Number 6,304,913).

16. Regarding claims 6 and 13, Nazem discloses the limitations, substantially as claimed, as described in claims 5 and 12. Nazem does not disclose wherein the proximal IPA becomes a new source IPA as the destination IPA becomes a new

proximal IPA communicating the destination URL identifier to a new destination IPA all of which occurring a plurality of times for indicating a number of hops from the proximal IPA to a last one of a respective plurality of new destination IPAs, the last one of the respective plurality of new destination IPA distally storing the web content data, and

the last linked segment is further referenced to a distance metric indicating a number of hops through the new destination IPAs from the proximal IPA.

In an analogous art of networking, Rune discloses a system where data is passed between a plurality of routers, wherein each router contains a routing table for storing hop counts to obtain the distance of the destination (Rune, col. 4, lines 29-45).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate counting the number of hops it takes to get from source to destination for the benefit of determining the best route from the source to the destination (Rune, see Abstract).

17. Regarding claim 14, Nazem and Rune discloses the limitations, substantially as claimed, as described in claim 13 including wherein the repeated transmitting step, the web content data is transmitting from the distal cache through the one or more intermediate web caches (Rune, col. 4, lines 25-40) and through a proximal cache at the proximal IPA to the user browser (Nazem, Fig. 2, 214, col. 3, lines 1-23).

18. Regarding claim 15, Nazem and Rune discloses the limitations, substantially as claimed, as described in claim 14. Nazem and Rune do not explicitly state the step of

assigning the proximal cache and one or more intermediate caches and the distal cache to one or more groups of cooperative caches in a network of grouped cooperative web caches, the web content data being transmitted from a first one of the one or more intermediate caches to a second one of the one or more intermediate caches, the first one and second one of the one or more intermediate caches being within the same group. However, it would have been obvious to one in the ordinary skill in the art at the time of the invention to realize that cooperative caches are assigned into groups if they are within the same network.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Bret Dennison whose telephone number is (703)305-8756. The examiner can normally be reached on M-F 8:30am-5pm.

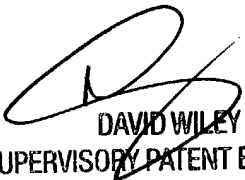
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on (703)308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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J. Bret Dennison  
Patent Examiner  
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